

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1 and 2 (Canceled)

Claim 3 (Currently amended): The microelectronic spring structure of Claim 73, wherein an end of said beam has an unloaded height over said electronic component in the range of about 1 to about 5 mils.

Claim 4 (Previously presented) The microelectronic spring structure of Claim 73, wherein an end of said beam has an unloaded height over said electronic component less than about 2 mils.

Claim 5 (Currently amended): The microelectronic spring structure of Claim 73, wherein said beam has a width in the range of about 6 to about 12 mils.

Claim 6 (Currently amended): The microelectronic spring structure of Claim 73, wherein said beam has a width no greater than about 5 mils at said base.

Claim 7 (Previously amended): The microelectronic spring structure of Claim 6, wherein said beam has a width less than about 1 mil.

Claim 8 (Currently amended): The microelectronic spring structure of Claim 73, wherein said beam has a length in the range of about 1 to about 10 mils.

Claims 9-12 (Canceled)

Claim 13 (Currently amended): The microelectronic spring structure of Claim 73, wherein said microelectronic spring structure has an elastic deflection ratio in a direction perpendicular to and towards said electronic component of at least about 10%.

Claim 14 (Currently amended): The microelectronic spring structure of Claim 73, wherein said microelectronic spring structure has an elastic range in a direction perpendicular to and towards said electronic component within a range of about one to about twenty mils.

Claims 15 and 16 (Canceled)

Claim 17 (Currently amended): The microelectronic spring structure of Claim 73, wherein said microelectronic spring structure has a spring rate at an end thereof in at least one direction within a range of about 30 to about 600 micrograms per micron.

Claim 18 (Canceled)

Claim 19 (Previously presented): The microelectronic spring structure of Claim 71, wherein said beam is contoured in a lengthwise direction.

Claim 20 (Canceled)

Claim 21 (Previously presented): The microelectronic spring structure of Claim 71, wherein said cross-sectional width is generally V-shaped.

Claim 22 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 1~~ Claim 71, wherein said ~~beam~~ cross-sectional width is generally U-shaped in cross-section.

Claim 23 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 1~~ Claim 71, wherein said ~~beam~~ cross-sectional width is generally S-shaped in a lengthwise direction.

Claim 24 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 1~~ Claim 71, wherein said beam further comprises corrugations disposed along a lengthwise direction.

Claim 25 (Previously presented): The microelectronic spring structure of Claim 71, wherein said beam, in a lengthwise sectional view, has a stepped portion connected to said base.

Claim 26 (Currently amended): The microelectronic spring structure of Claim 25, wherein said stepped portion of said beam has a step height in the range about 5% to about 20% of an unloaded height of an end of said beam over said electronic component.

Claim 27 (Previously presented): The electronic component of Claim 25, wherein said stepped portion of said beam has a step height about 10% of an unloaded height of an end of said beam over said electronic component.

Claim 28 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 1~~ Claim 71, wherein said beam further comprises a plurality of lengthwise ribs extending over at least a portion of said beam.

Claim 29 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 1~~ Claim 71, wherein said beam further comprises a lengthwise rib extending over at least a portion of said beam.

Claim 30 (Withdrawn): The microelectronic spring structure of Claim 29, wherein said beam has a stepped portion connected to said base, and wherein said lengthwise rib extends to said stepped portion.

Claim 31 (Withdrawn): The microelectronic spring structure of Claim 29, wherein said lengthwise rib extends into said base.

Claim 32 (Withdrawn): The microelectronic spring structure of Claim 29, wherein said lengthwise rib comprises a lengthwise channel.

Claim 33 (Withdrawn): The microelectronic spring structure of Claim 29, wherein said lengthwise channel has a regular geometric cross-sectional shape.

Claim 34 (Withdrawn): The microelectronic spring structure of Claim 33, wherein said regular geometric cross-sectional shape further comprises a shape selected from the group consisting of part-rectangular, part-trapezoidal, part-triangular and part-round shapes.

Claim 35 (Withdrawn): The microelectronic spring structure of Claim 29, wherein a cross-sectional dimension of said lengthwise rib differs over the length thereof.

Claim 36 (Withdrawn): The microelectronic spring structure of Claim 29, wherein said rib is comprised of a folded portion of said beam.

Claim 37 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 1~~ Claim 71, wherein said beam has a plurality of ribs along a lengthwise direction, wherein said plurality of ribs have a height tapering from a first dimension at said base to a second dimension at said tip, wherein said first dimension is greater than said second dimension.

Claim 38 (Previously presented): The microelectronic spring structure of Claim 71, wherein said base and said beam are integrally formed.

Claims 39 and 40 (Canceled)

Claim 41 (Previously presented): The microelectronic spring structure of Claim 71, wherein said beam, viewed in a direction normal to said electronic component, is tapered so as to have a generally triangular shape.

Claim 42 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 2~~ Claim 71, wherein said beam, viewed in a direction normal to said ~~substrate surface~~ electronic component, has a generally rectangular shape.

Claim 43 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 2~~ Claim 71, wherein said beam, viewed in a direction normal to said ~~substrate surface~~ electronic component, has an offset with respect to a central axis.

Claim 44 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 2~~ Claim 71, wherein said beam, viewed in a direction normal to said ~~substrate surface~~ electronic component, is contoured so that ~~[[said]]~~ a tip located at an end of said beam that is opposite said base is positioned a distance from said base that is less than an integrated length of said beam between said base and said tip.

Claim 45 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 2~~ Claim 71, wherein said beam, viewed in a direction normal to said ~~substrate surface~~ electronic component, is serpentine.

Claim 46 (Withdrawn-currently amended): The microelectronic spring structure of ~~Claim 2~~ Claim 71, wherein said beam, viewed in a direction normal to said ~~substrate surface~~ electronic component, is C-shaped.

Claim 47 (Withdrawn): The microelectronic spring structure of Claim 44, wherein a portion of said beam comprises at least two parallel arms.

Claim 48 (Previously presented): The microelectronic spring structure of Claim 71, wherein said base and said beam are integrally formed and comprise a resilient material.

Claims 49 and 50 (Canceled)

Claim 51 (Previously presented): The microelectronic spring structure of Claim 71, wherein said base and said beam are integrally formed and comprise a layer of an electrically conductive seed material and a layer of electroplated metallic material.

Claims 52-70 (Canceled)

Claim 71 (Currently amended): A microelectronic spring structure comprising:

a base secured to a terminal of an electronic component; and

a beam extending from said base and spaced from said electronic component, wherein a cross-sectional width of said beam ~~being countered~~ comprises a contour that increases at least one of an area moment of inertia of said beam, a stiffness of said beam, and a spring force of said beam relative to a beam having an equivalent mass per unit length but lacking said contour.

Claim 72 (Previously presented): The microelectronic spring structure of Claim 71, wherein said electronic component is a semiconductor die.

Claim 73 (Previously presented): The microelectronic spring structure of Claim 72, wherein said semiconductor die is one of a plurality of semiconductor dice composing an unsingulated semiconductor wafer.

Claim 74 (Currently amended): An electronic component comprising:

a terminal; and

a contact structure comprising:

a base secured to said terminal; and

a beam extending from said base and spaced from said electronic component, a cross-sectional width of said beam contoured in one of a "V" shape, a "U" shape, and a shape comprising an extension that forms a rib.

Claim 75 (Previously presented): The electronic component of Claim 74, wherein said electronic component is a semiconductor die.

Claim 76 (Previously presented): The electronic component of Claim 75, wherein said semiconductor die is one of a plurality of semiconductor dice composing an unsingulated semiconductor wafer.

Claim 77 (Previously presented): The electronic component of Claim 74, wherein said beam is contoured along a length thereof.

Claim 78 (Previously presented): The electronic component of Claim 74, wherein said beam has a generally triangular shape.

Claim 79 (Previously presented): The electronic component of Claim 74, wherein said base and said beam are integrally formed.

Claim 80 (Previously presented): The electronic component of Claim 79, wherein said base and said beam comprise a resilient material.

Claim 81 (Previously presented): The electronic component of Claim 79, wherein said base and said beam comprise a layer of seed material and a layer of electroplated metallic material.

Claim 82 (Previously presented): The electronic component of Claim 74 further comprising a plurality of said terminals and a plurality of said contact structures.

Claims 83-104 (Canceled)

Claim 105 (New): The electronic component of claim 74, wherein said cross-sectional width of said beam is contoured in said "V" shape.

Claim 106 (Withdrawn): The electronic component of claim 74, wherein said cross-sectional width of said beam is contoured in said "U" shape.

Claim 107 (Withdrawn): The electronic component of claim 74, wherein said cross-sectional width of said beam is contoured in said shape comprising an extension that forms a rib.

Claim 108 (New): The microelectronic spring structure of Claim 71, wherein said contour increases said area moment of inertia of said beam.

Claim 109 (New): The microelectronic spring structure of Claim 71, wherein said contour increases said stiffness of said beam.

Claim 110 (New): The microelectronic spring structure of Claim 71, wherein said contour increases said spring force of said beam.

Claim 111 (New): The microelectronic spring structure of Claim 71, wherein said contour is non-rectangular.

Claim 112 (New): The microelectronic spring structure of Claim 111, wherein said contour increases a spring force of said beam relative to a beam having an equivalent mass per unit length having a rectangular contour.

Claim 113 (New): The microelectronic spring structure of Claim 71, wherein said base and said beam are integrally formed one with another and comprise a single structure.

Claim 114 (New): The microelectronic spring structure of Claim 113, wherein said single structure is a lithographically formed structure.

Claim 115 (New): The microelectronic spring structure of Claim 71, wherein said base and said beam compose a single, structure formed by an electroplated deposit.

Claim 116 (New): An electronic component comprising:

a terminal disposed on said electronic component and providing signal input and/or output to said electronic component; and

an electrically conductive contact structure having two ends, wherein:

a first of said ends comprises a base secured to said terminal,

a beam portion of said contact structure extends away from said electronic component and terminates in said second end, and

a geometric shape of a cross-sectional width of said beam is asymmetrical with respect to an axis about which a mass distribution of said beam at said cross-sectional width is symmetrically distributed.

Claim 117 (New): The electronic component of Claim 116, wherein said cross-sectional width is perpendicular to a length of said beam from said first end to said second end.

Claim 118 (New): The electronic component of Claim 116, wherein said cross-sectional width is perpendicular to a contour of said beam from said first end to said second end.

Claim 119 (New): The electronic component of Claim 116, wherein said shape is "V" shaped.

Claim 120 (Withdrawn): The electronic component of Claim 116, wherein said shape is "U" shaped.

Claim 121 (Withdrawn): The electronic component of Claim 116, wherein said shape comprises an extended portion forming a rib.

Claim 122 (New): The electronic component of Claim 116, wherein said shape comprises an arc.

Claim 123 (Withdrawn): The electronic component of Claim 116, wherein said shape comprises two convex arcs joined one to another.

Claim 124 (New): The electronic component of Claim 116, wherein said contact structure comprises an integrally formed, single structure.

Claim 125 (New): The electronic component of Claim 124, wherein said contact structure is lithographically formed.

Claim 126 (New): The electronic component of Claim 116, wherein said contact structure comprises electroplated material.

Claim 127 (New): The electronic component of Claim 116, wherein said shape increases at least one of an area moment of inertia of said beam, a stiffness of said beam, and a spring force of said beam relative to a beam having an equivalent mass per unit length but lacking said shape.

Claim 128 (New): The electronic component of Claim 127, wherein said shape increases said area moment of inertia of said beam.

Claim 129 (New): The electronic component of Claim 127, wherein said shape increases said stiffness of said beam.

Claim 130 (New): The electronic component of Claim 127, wherein said shape increases said spring force of said beam.

Claim 131 (New): The electronic component of claim 116, wherein said electronic component comprises a semiconductor die.

Claim 132 (New): The electronic component of claim 131, wherein said die is one of a plurality of dies of an unsingulated semiconductor wafer.